How to Buy Products with Low Standby Power

Energy Efficiency and Renewable Energy
Federal Energy Management Program

Why Agencies Should Buy Efficient Products

- *Executive Order 13221 directs agencies, when feasible and cost effective, to purchase products that use 1 watt of power or less during standby ("off") mode. Executive Order 13123 and FAR part 23 direct agencies to purchase* ENERGY STAR® *products or FEMP-designated products in the upper 25% of energy efficiency.*
- *Agencies that buy efficient products can save on energy costs and help prevent pollution.*
- *As the world's largest consumer, the federal government can help "pull" the market towards greater energy efficiency, while saving taxpayer dollars.*

For More Information:

- DOE's Federal Energy Management Program (FEMP) Help Desk and web site have up-to-date information on energy-efficient federal procurement, including the latest versions of purchasing recommendations for other products. FEMP also has an online data base of products that meet this recommendation for low standby power.
  Phone: (800) 363-3732
  www.eren.doe.gov/femp/procurement
- Environmental Protection Agency (EPA) has ENERGY STAR® product listings and purchasing specifications for products with low standby power.
  Phone: (888) STAR-YES (782-7937)
  www.energystar.gov/products/
- Lawrence Berkeley National Laboratory provided supporting analysis for this recommendation on products with low standby power.
  Phone: (202) 646-7950
  www.oahu.lbl.gov

Efficiency Recommendations

Product Type	Recommended Standby Levels	Best Available Standby Level
Office Equipment		
Desktop Computer	3 watts or less [2 watts or less][a]	1 watt or less
Laptop Computer	1 watt or less	1 watt or less
Computer Monitor	2 watts or less [1 watt or less][a]	1 watt or less
Printer	1 watt or less	1 watt or less
Copier	1 watt or less	1 watt or less
Fax/Printer	4 watts or less [2 watts or less][a]	1 watt or less
Audio/Video Products		
TV	1 watt or less	1 watt or less
VCR	2 watts or less	1 watt or less
TV/VCR Combo	3 watts or less	1 watt or less
Consumer Audio[b]	2 watts or less	1 watt or less

a) Represents proposed standby levels, effective July 2003.

b) As defined by ENERGY STAR, a consumer audio product is a device that produces or records signals in the audio domain and draws current from a building via a power cord or via an AC power adapter.

Definition

Standby power refers to the electricity used by electrical products when they are switched off or not performing their primary purpose. Standby ("off") mode is not the same as Energy Star "sleep" mode for office equipment (see "Standby vs. Sleep Modes").

Money Isn't All You're Saving

Where to Find Products with Low Standby Power

FEMP is currently working with the Defense Logistics Agency (DLA) and the General Services Administration (GSA) to help federal buyers identify low standby products in catalogs and supply schedules.When buying or specifying any of the products listed in the table above, make sure the product qualifies for the ENERGY STAR® label and also meets these recommended low standby power levels. Some, but not all, ENERGY STAR products have low standby power levels as defined by Executive Order 13221 and FEMP. FEMP maintains a

web based database of models for products covered in this recommendation that have low standby power. For a current list of complying models go to www.eren.doe.gov/femp/procurement, click on "Standby Devices", and then click on the "Standby Power Data Center" icon shown here (see "For More Information"). ENERGY STAR is currently updating their web based database which will include data on low-standby power products based on this efficiency recommendation.

Standby vs. Sleep Modes

All ENERGY STAR labeled computers, monitors, copiers, printers, and fax machines will switch into a low-power "sleep" mode after a specified period of non-use. When needed, these devices return automatically to the active mode (displaying an image, copying, receiving a fax etc.) after a brief delay. Standby mode is different because the user—not the machine itself—has switched off the device and must manually turn it back on. Power use in the standby mode is usually much lower than in the sleep mode.

Identifying Products that Use Standby Power

The only way to be certain if a product consumes standby power is to measure it with a watt-meter. However, here are a few clues to help identify products with standby power:

- *A product that has an external power supply. Examples are cell phone chargers, cordless telephones, many inkjet printers, and battery chargers.*
- *A product that has a remote control – like TVs, VCRs, ceiling fans, and consumer audio equipment.*
- *A product with a continuous digital display - like kitchen appliances and clocks.*
- *A product with a rechargeable battery. These products continue to use standby power even after the battery is fully charged.*

While these clues are useful, some products consume standby power with no apparent signs. Many switches labeled "off" do not completely shut off power. For example, certain halogen desk lamps with low-voltage power supplies consume power even when the light is off. Devices with a switch that physically breaks the circuit, do not use standby power.

Cost-Effectiveness Rule of Thumb for Products with Low Standby Power

1 watt saved in standby power = $1.25 savings in lifetime energy costs

Definition

Lifetime energy cost is the sum of the discounted present values of future annual energy costs. Future electricity price trends and a discount rate of 3.2% are based on federal guidelines (effective from April, 2002 to March, 2003).

As a general rule of thumb for federal agencies, each 1 watt saved in standby power is worth about $1.25 in lower energy operating costs over the life of the product. For example, an agency buying 200 low-standby monitors (at 1 watt instead of 3 watts) will save $500 over the life of the monitors. This assumes an average of 6000 hours per year in standby ("off") mode and a typical product life of 4 years. Generally, low standby power is not associated with higher purchase price.

What if my Electricity Price or Standby ("Off") Hours are different?

To adjust this rule of thumb for a different electricity price, multiply the typical lifetime energy cost savings above by this ratio: $\left(\frac{\textit{Your price in ¢/kWh}}{\textit{6.0 ¢/kWh}}\right)$. To adjust for different standby "off" hours, multiply the typical lifetime energy cost savings above by this ratio: $\left(\frac{\textit{Your hours}}{\textit{6000 hours}}\right)$.